

Peaceful Nuclear Cooperation

U.S. Support for NPT Article IV

UNITED STATES & TURKEY

Through the International Atomic Energy Agency (IAEA), the United States contributes to the work of many countries using nuclear materials and technology for peaceful purposes. In recent years, U.S. support has focused on achieving tangible and lasting benefits in fields that are vital to human development, including agriculture, human health, water resource management, and human resource development. Since 2000, the IAEA has approved and funded \$4,488,242 under its Technical Cooperation (TC) program for projects in Turkey.



In addition to the United States' longstanding support for the IAEA's activities to promote peaceful nuclear applications, at the 2010 NPT Review Conference, the United States announced a \$100 million USD effort to expand this support over the next five years. The United States has pledged \$50 million towards the IAEA's Peaceful Uses Initiative (PUI), focusing on human health, food security, water resource management, and nuclear power infrastructure development.

The United States views its support for peaceful uses of nuclear energy, to which all NPT Parties are entitled, as a critical part of its broader effort to strengthen the IAEA and the global nuclear nonproliferation regime. The U.S. has already designated over \$22 million for IAEA projects benefitting over 120 countries, including Turkey, for which funding was previously unavailable. The United States is working with partners to reach the \$100 million goal, and welcomes commitments of over \$12 million from Japan, the Republic of Korea, New Zealand, the Czech Republic, Hungary, Sweden, Australia, France, Indonesia, Brazil, Italy, the UK and Kazakhstan.

NUCLEAR ENERGY

Due to the continued increase in fossil fuel prices, concerns about secure supply and an increasing awareness of the importance of greenhouse gas reductions, several countries are considering expanding their nuclear power programs or introducing nuclear energy for the first time. This requires

careful planning, preparation and investment in a sustainable infrastructure to provide the legal, regulatory, technological, and human resources necessary. Turkey is therefore participating in a regional TC project sponsored by the United States to strengthen national and regional infrastructures for the planning and development of nuclear power programs. The project will ensure that any Member State planning the introduction or expansion of nuclear energy has a complete understanding of the range of issues and activities to be addressed before implementation of a nuclear power project.

NUCLEAR FUEL

Recently, several countries, including Turkey, participated in U.S.-sponsored regional TC projects to convert research reactor cores from highly enriched uranium (HEU) to low enriched uranium (LEU) and facilitate the return of highly enriched and low-enriched uranium to the country of origin. The projects assisted participating countries with research reactors to repatriate, manage, or dispose of their fresh or irradiated fuel, and supported the Russian Research Reactor Fuel Return program and the Global Threat Reduction Initiative.

NUCLEAR SAFETY

Radioactive sources are widely employed for beneficial purposes throughout the world, in areas including industry, medicine, and agriculture. However, accidents involving radioactive sources have raised awareness of the safety and security risks created by sources that are outside effective control. For many years the IAEA has been helping Member States strengthen national management and regulatory infrastructures to ensure that radioactive sources are appropriately regulated at all times. Turkey is also

1. *Nuclear power plant under construction.*
Credit: IAEA
2. *Exploring ways to secure radioactive waste for generations to come.* Credit: Comet
3. *Verifying a load of highly enriched uranium fuel before it is brought back to Russia.*
Credit: Dean Calma/IAEA

currently participating in an interregional TC project sponsored by the United States to strengthen cradle-to-grave control of radioactive sources in the Mediterranean region.

Turkey is also participating in regional TC projects through which Member States will improve their comprehensive regulatory infrastructure to establish and develop adequate and effective regulatory mechanisms, and harmonize and streamline national capabilities for regulatory control in full compliance with the IAEA Safety Standards and international requirements.

AGRICULTURE

In parts of the Balkans and the Eastern Mediterranean, the Mediterranean fruit fly causes major damage to fruit and vegetable production by reducing fruit production, increasing insecticide use, and therefore directly impacting the production cost of agricultural commodities. Moreover, it causes problems in international trade in fruits and vegetables due to quarantine regulations imposed by some countries, and maximum insecticide residue limits allowed by others.

Turkey is working through a regional TC project sponsored by the United States to enhance agricultural productivity in the Balkans and Eastern Mediterranean by supporting fruit fly pest prevention and management. This will be accomplished through sharing technical knowledge and providing support to selected fruit fly suppression programs in which the use of the sterile insect technique (SIT), as part of an

area-wide integrated management approach, has already proven to be technically and economically feasible.

HUMAN RESOURCES

To contribute to Member States' manpower development, the IAEA awards individual fellowships and organizes group training courses. Every year, numerous fellows and training course participants travel to the United States for training in various peaceful uses of nuclear technology and return to their home country to apply the lessons learned.

Since 2000, the United States has hosted multiple training courses that included Turkish participants in fields such as nuclear safety and security, nuclear power, energy infrastructure and energy security, expanding nuclear power programs, and developing long-range energy strategies. Training was also provided through the IAEA Fellowship Program to 13 Turks, six of which were sponsored by the United States, in the fields of accelerators, radiation chemistry, power reactors, soil and water management and crop nutrition, plant breeding and genetics, animal production, food irradiation, radioisotope and radiation, and safety assessment.

Additionally, since 2000, 10 U.S. experts have traveled to Turkey to collaborate through various IAEA Technical Cooperation projects. Examples of some topics include data analysis, radiation entomology, strategic planning, and quarantine treatment.

agreement with the Turkish Atomic Energy Authority (TAEA) for cooperation regarding thermal-hydraulic code applications and maintenance.

Additionally, since 2000, 11 Turkish physicians have been certified in the U.S. through the American Board of Nuclear Medicine.



1. Metal seals show evidence of any unauthorized attempts to access secure material. Credit: Dean Calma/IAEA
2. Damaged apples infested with fruit flies. Credit: Louise Potterton/IAEA
3. Standard maintenance check. Credit: Arthus-Bertrand
4. IAEA fellows receive training in plant breeding. Credit: Dean Calma/IAEA

Through bilateral efforts, the United States has provided direct support to Member States through various collaborative projects such as the exchange of information, expert visits, and training of personnel.

In August 2002, the U.S. Nuclear Regulatory Commission signed an

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